

Observing the Gameplay Experience of the Mobile Game “Publizeneo”

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The goal of this observation was to learn more about the ways our participants interacted with the mobile game “Publizeneo.” In particular, our stakeholders were interested to know whether the current iteration of the game worked as a stand-alone piece, without supplemental literature. We observed six participants playing the game, and asked them to narrate their thoughts, opinions, and gameplay choices. We also noted how long it took each participant to complete the game, as well as the individual game levels. Our goal was to collect data and feedback that could be used to improve the game in the future. We found that the current game did not work as a stand-alone piece, and that our participants found the plot very confusing. In particular, one game, modeled after a chat room, became the main source of confusion for many of our participants. We recommended that stakeholders focus on one narrative, removing additional plotlines, to simplify the game’s plot. We recommended using the plot of the chat room game as the model for the entire game, in an effort to unify the plot around one theme.

INTRODUCTION

Research Question

A member of our research team, Kendra Dobson, designed a mobile game that was released last Spring. Our team decided to use this opportunity to observe participants interacting with the game, as the results would be helpful for Kendra when making future edits to the game.

“Publizeneo” was originally designed as a supplemental mobile game and invitation to an interactive stage play which debuted at Austin Scottish Rite Theatre in March, 2018. It was first designed to entice the public to purchase tickets for this live event. Theatergoers were to download the game and play a simple puzzle that would introduce the player and potential audience member to protagonists and rules of the world within this speculative fiction narrative. Players were to win one simple puzzle, then be redirected to a webpage where they could purchase a ticket and continue to watch the drama that they started through gameplay unfold on stage. However, the game was not completed in time for marketing to proceed as planned. After the play closed, Kendra decided to redesign the concept of “Publizeneo” as a full mobile game which included more narrative, puzzles, and levels. “Publizeneo” was completed in March, 2019 in time for South by Southwest (SXSW) of that year. The design team debuted “Publizeneo” as an exhibit at SXSW 2019 where they could watch attendees play at their booth. However, the designers did not formally observe this first population of players.

This observation will help designers of this game to understand how players interact with “Publizeneo” as a stand-alone piece, without supplemental literature. Our goal is to determine any issues participants experience while playing the game (gameplay, technical issues, storyline issues, etc.), and use this data to inform future revisions of the game.

Ethical Considerations

We recognize that it is not ideal to have our stakeholder (Kendra) also act as a member of our observation team. In order to be transparent with our participants, we told them that the video game they would be playing had been made by a member of our observation team. We stressed that this fact

should not impact their comments regarding the game, and that we were looking for their honest feedback. Regardless, we have no real way of knowing if this information affected their comments about the game.

Interview Participants

Each member of our research team was responsible for observing two participants. For this particular activity, we knew we would have to be somewhat more discerning when choosing participants, as this was a slightly more niche activity. While we were not necessarily concerned with finding participants who would consider themselves “experts” in gaming, we did want to ensure that our participants had some familiarity with video games and mobile gaming. We believed some level of familiarity would be more beneficial to us and our stakeholder in terms of the data we collected.

We decided to use convenience sampling and interview friends and family, rather than seek out random participants. Due to the COVID-19 pandemic, we conducted our observations through a mix of in-person and video conferencing sessions. Each team member conducted their observations independently of the others. We anticipated that each interview would take roughly 30 minutes, depending on how long it took participants to complete the game.

METHODS

Recruitment

We ultimately recruited six participants: NS, age 30; KF, age 23; BR, age 21; CH, age 15; NK, age 22; and GP, age 24. BR and CH both considered themselves “gamers” and were excited to participate; the other participants considered themselves somewhat intermediate in terms of gaming familiarity.

According to the game’s designers, the ideal age range for this game is middle- to high-school students. It was designed to accommodate beginner- and intermediate-level gamers. While most of our participants consider themselves intermediate gamers, only one, CH, fits into the designer’s ideal age range.

Three of these observations were conducted in-person, and three were conducted via Zoom. During our Zoom session with participant KF, an unexpected difficulty arose. KF only had access to one device, her iPhone. She had to use this device to both play the game and use Zoom. While she was playing the game, her observer, Shaun, was not able to see her; her Zoom screen was black, and only her voice could be heard. Although Shaun and KF were still able to communicate, and KF continued to narrate her thought and actions, it did become difficult to observe her actions to their fullest extent.

“Publizenego” is available for download on both Apple and Android devices. In order to participate in this observation, participants needed to have one of these two types of devices.

We did have some issues during the recruitment process. As stated earlier, we decided to be more selective in choosing participants, in order to ensure we observed participants with some familiarity with video games and mobile gaming. This left us with a smaller pool of family, friends, and acquaintances to choose from. Many of our older family members did not feel comfortable participating because of their unfamiliarity with mobile games. This left us to narrow our search down to younger, more gaming-savvy participants.

Kendra in particular had a number of issues recruiting participants. The first few potential participants she approached turned down the opportunity due to timing issues due to work, traveling, and moving. Most interestingly, though, one person that she approached told her that he was uncomfortable with the idea of being observed. He didn’t necessarily have reservations about participating in a study, but he did not like the idea of being watched. Kendra respected his wishes and did not ask him to participate.

Procedure and protocol

Prior to the beginning of the observation, we asked participants to download “Publizenego” on their mobile device. Before beginning the observation, we asked for confirmation that they did not have any issue downloading the game.

We began the observation by thanking participants for agreeing to be observed and gave them a brief background on the subject of the observation. We then read the consent form to them, and asked them to verbally indicate that they agreed to be observed for this assignment. As one of our participants was under the age of 18, we obtained parental permission for this participant as well. (To view the full consent language, please see Appendix A.) Among our research team, we did not mandate that each researcher record (audio or video) the observation and share it with the rest of the team. Each researcher decided for themselves if they thought it necessary to record their observation to assist in note taking. If the researcher did plan on recording the observation, they notified the participant and asked for their verbal consent to be recorded.

For this observation, we decided to focus on a process/task analysis. We chose to observe how our participants reacted to events in the game. (To view our field notes, please see Appendix B.) We asked our participants to

play the game one time through, using the “think aloud” method to narrate their thoughts and gameplay choices to us in real-time while playing. For context, “Publizenego” consists of five activities (a sundial activity that is played twice, a maze activity that is played twice, and a chatroom activity), along with narration interludes between activities that require players to choose between different sets of replies in order to move the plot along. We made notes of our participants’ comments while playing the game, as well as noting how long it took them to complete each activity, and the game as a whole.

Research team’s thoughts on protocol. Due to scheduling issues, our research team was not able to touch base with each other in between our observations. Therefore, it wasn’t until the observations were complete and we were comparing field notes that we realized we had not internally decided upon a definition of a game “event.” Some members of our team defined “event” as only the five activities listed above. Other members considered “event” to encompass both those five activities, as well as the response choices that appear during narration interludes. In the future, we will have to decide on a concrete definition of the types of events we are observing, to ensure our data is consistent.

We also encountered difficulties getting participants to comply with the “think aloud” method. Although some participants consistently narrated their thoughts and actions while playing, other participants had to be reminded to share their thoughts and actions with the observer. Because of this, some of our data is much more robust, while others do not provide the same level of detail. In the future, we should agree to a protocol that addresses a participant’s continued silence during an observation, and provides prompts to encourage participants to be more vocal.

Data analysis methods and tools

For this observational study, there was not a plethora of quantitative or qualitative data immediately collectable or analyzable as there would be in survey or interview studies. To combat this lack of data, our research team instead evaluated participants based on key milestones when playing “Publizenego”. These milestones included when a puzzle or critical inflection point was reached in the story. By agreeing to document these milestones prior to conducting the observations, each researcher was able to benchmark their participants’ reactions.

In addition to data about reactions to each milestone, we additionally recorded time estimates for each puzzle, adding another critical piece of data that could be used to evaluate the level of difficulty each player had with a given task. These times would also allow us to comment on how players segmented across age buckets and explore any potential correlations between play time and age.

While not applied to this task for lack of technical support, process mining would have been a useful data analysis tool. If we had access and permission to use logs generated from the game, we could have further analyzed player behaviors. In particular, measuring the timestamps provided in these logs would have allowed us to gauge reaction times, more accurately measure puzzle completion

times and measure engagement with the text-based portions of the game. While we did our best to develop proxies for these metrics, having the quantitative data from a process mining study would have allowed us to measure our participants with an increased level of precision.

Our best analytical tool for this observational study was our conversations as a research group about individual player reactions. The feedback shared by players during the study, whether solicited or unsolicited, became a key talking point. We met frequently to discuss these reactions and contextualize them with the rest of the group's feedback. These sessions led to hypotheses about potential gameplay and application design changes, as explored in the analysis portions of this study.

RESULTS

Completion times for milestones. We recorded how long it took all of our participants to complete the game in its entirety. BR completed the game in 21 minutes; CH in 12 minutes; NS in 15 minutes; KF in 16 minutes; NK in 22 minutes; and GP in 18 minutes.

When "Publizenego" debuted in 2019 at SXSW, the designers observed that attendees who interacted with the game were able to complete it, on average, in 15 minutes. Our participants' average completion time was a little more than 17 minutes. While this puts us above the SXSW average, we do not believe the difference is significant enough to make us question our data. We are not aware of SXSW participant completion times for individual games.

For "Publizenego" game one, the completion times were as followed: BR, 4 minutes; CH, 4 minutes; NS, 24 seconds; KF, 20 seconds; NK, 49 seconds; and GP, 35 seconds.

For game two, the completion times were as followed: BR, 2 minutes; CH, 1 minute; NS, 2 minutes and 10 seconds; KF, 1 minute and 13 seconds; NK, 49 seconds; and GP, 1 minutes and 10 seconds.

For game three, the completion times were as followed: BR, 4 minutes; CH, 1 minute; NS, 3 minutes and 45 seconds; KF, 2 minutes; NK, 3 minutes and 35 seconds; and GP, 2 minutes and 17 seconds.

For game four, the completion times were as followed: BR, 1 minute; CH, 3 minutes; NS, 20 seconds; KF, 45 seconds; NK, 40 seconds; and GP, 35 seconds.

For game five, the completion times were as followed: BR, 30 seconds; CH, 30 seconds; NS, 1 minute and 10 seconds; KF, 40 seconds; NK, 4 minutes and 12 seconds; and GP, 2 minutes and 11 seconds.

Of our six participants, BR and CH self-reported that they considered themselves to be very comfortable and familiar with video and mobile games, while the rest of our participants considered themselves more casual, intermediate gamers. However, we did not find that our more "expert" participants completed the game, nor the individual puzzles, any faster than the rest of our participants. While CH completed the entire game in the shortest amount of time, we had no real outliers in terms of game completion time. For both the overall game and the individual levels, we did not find that a greater self-reported interest in video games

impacted how quickly a participant was able to complete a puzzle.

In terms of feedback, we found that one of the most common complaints amongst our participants was their confusion over the game's plot. This confusion came up in nearly every observation. Participants expressed confusion over the larger narrative structure, as well as on an individual game level. In particular, a majority of our participants had difficulty understanding how to complete level three, a game that resembles a chat room. They commented that they did not understand the rules of the game, nor how the point structure worked.

With the exception of level three, our participants' opinions on the other levels were much more varied. Although there were some common issues that many participants shared (discussed in more detail below), each participant had a fairly unique experience in each level. For example, GP complained that the puzzles did not get progressively harder as he moved from level to level. NK, on the other hand, completed level two in one attempt, but had such difficulty completing that same maze game later on that she almost gave up. Each participants' overall experience with the game did not necessarily mirror another's', with the exception of general confusion over the plot.

As with our observation above, familiarity with video games did not seem to impact our participants' understanding of the plot or their success at the games. For example, KF, an intermediate gamer, found level one's sundial game quite easy, and completed it quickly. However, CH, who considers himself a more advanced gamer, struggled with this level. In general, we did not find a correlation between self-reported level of experience with how successfully our participants completed or understood "Publizenego".

Although we collected ages, we did not find a correlation between age and success in completing or understanding "Publizenego".

DISCUSSION

Narrative

Our stakeholders adapted the concept of this video game from a supplemental video game designed to work together with a theatrical dramatization. Now as a stand-alone piece it is imperative that our stakeholders determine if "Publizenego" communicates a full and clear plot successfully on its own. Our research team took notice of how people interacted with text that presented elements of the story to the user. Our results, therefore, can aid designers in understanding how to meet their goal.

Participant results. Participant KF enjoys narrative games and her favorite game is "Kingdom Hearts". Her favorite part of "Publizenego" was getting to choose how to interact with characters. Her biggest issue was the "flow of interaction" during the narrative portions of the game. She was confused by some parts of the plot (specifically the moment Lydia gets deleted) and thought it could have been simpler or explained more clearly. However, her confusion over the plot did not impact the way she interacted with the game.

Participant BR read the story elements throughout the game. As he was reading his brows would furrow, followed by a verbal expression of his being thrown off. He would continue to click through the story until reaching a point of game play. This continued until he reached the third game level. "I think I figured it out," he said as he moved into playing the third game level. He went on to explain the allegory of the story as he understood it. When he completed the game, he said that the story was "confusing" because he thought that he understood the allegory early on, but he wasn't sure until he got to level three. He thought that adjusting the information so that this allegory was clear early in the game would eliminate confusion.

This corresponds with what Participant KF said about being confused about some parts of the plot. Like KF, BR's confusion did not impact his interaction with the game. Moreover, BR commented on the text as a graphical element. "Blocks of text are beginner-ish and doesn't live up to the quality of games that I usually download and play for fun," he said about the text layout and graphics surrounding the text. The observer asked BR if the narrative detracted from the fun of the game. BR responded that it was not the narrative that detracted, but the look of the text. For Participant BR, it was the text as a graphic element that left an amateurish impression that would discourage him from playing the game for fun.

Participants NK and GP also read the narrative elements, but wanted to know more about the backstory as they were playing the game. Like KF and BR, NK and GP seemed to imply that they were missing something within the plot. For Participant NK the story elements did impact the user experience. NK commented that he was confused by the whole interaction and was not sure that the experience felt like a "game," but felt more like an "exercise in reading with a few interactions." Not understanding the goals also made the story feel convoluted for NK.

Participant CH enjoyed the game saying that it was a "fun, cool game," however the observer saw that he was moving through the game quickly. Kendra was observing CH over Zoom, but she could not see his screen, so she asked him if he was reading the story or just clicking "continue" to get to the game play elements. Participant CH confirmed that he was clicking through all the text to get to the parts of the game that he could play.

Narrative Findings. It seems that most participants did not feel like the narrative was complete and clear as a stand-alone piece without supplemental information. Based on participant comments, we believe that teaching the user story through gameplay is more effective and enjoyable for the player than having the player read backstory in between gameplay. The game appears to be more fun without stopping to read blocks of text for story information. Moreover, the story elements shared must be high-concept and focused so the player does not feel that they need more backstory. Story elements must be short and to-the-point, but should not tease a larger narrative. The most important information must be clearly conveyed upfront in order to eliminate confusion.

Events and Levels

There were four main puzzles within the game separated by narrative interludes. Our research team agreed to pay close attention to the duration of time spent on events within the game. Some of our research team observed each puzzle as an event, while others included narrative interludes as events. Either way, from our field notes we were able to determine the amount of time spent on each event. We also took note of comments made by participants as they were experiencing each event.

The events were as follows: (1) introduction of narrative establishing setting through text, (2) more text as an introduction to characters through dialogue, and the player must pick a response, (3) first puzzle game where the player must beam light into a sun coil, (4) the story continues through dialogue text and the player selects a response, (5) second puzzle game where the player must navigate through the tunnel without getting caught by an enemy/guard, (6) read more narrative without having to select responses, (7) third game where the player must respond to social media comments, (8) story and dialogue continue, and the player must select a response, (9) an animation shows a key plot point happen within the story/ the character Lynda is deleted, (10) text continues to tell the story, (11) story and dialogue continue as the player selects responses, (12) more story continues through text, (13) in a fourth game the player must use what they learned from the first game and draw another picture by beaming light into sun coil sockets, (14) a fifth and final game resembles the second game, but this time when the player reaches the end of the tunnel the full game has been beaten, (15) an animation shows the antagonist being defeated, (16) text closes out the game with an ending to the story, (17) game credits roll.

Game level one, and participant results. In the first puzzle, players were tasked with completing a picture of a character from the story. They were to tap a sundial as it spun. When tapped, the spinning sun dial would change directions. Players must tap the dial at the correct time to align the sun's ray at a precise point that will highlight a dot on the edge of the wheel. When the players time this correctly, part of a picture appears, but if the player incorrectly taps, that part of the picture will disappear.

On average, this puzzle was the longest one to complete for Kendra's participants. Participant CH commented on how frustrating this puzzle was for him. After three minutes of attempting to solve it, he asked Kendra, "Are you supposed to skip one?" He was referring to the dots placed around the sun dial. He had discovered a strategy for a solution. If you skip a dot and hold off tapping so that there is always an untapped dot in between a tapped dot the puzzle is easy to solve. Once he figured this out, he was able to complete the puzzle before Kendra could answer his question.

Conversely, Shaun observed Participant KF who had no issues with the sundial game. "I felt like it was pretty easy to understand," Participant KF said. Shaun also observed Participant NS, who called the game "a little tricky," but had no issues understanding the concept or completing the game.

Participant GP got the hang of it very quickly and didn't think it was a challenging enough puzzle. GP noted that the mechanics could have been changed to add variable speed and

make the timing harder, or to have false holes that would have detracted from the score. Participant NK did not understand that an action was required at first. Once NK hit the first dial, the instructions were understood, and the remainder of the puzzle was easy to complete.

Game level one findings. The time range in which the participants completed this puzzle reflects a normal pattern of difficulty preferences. The design team might consider creating options for players to choose a difficulty level so that the player can tailor their experiences.

Game level two, and participant results. In the second puzzle, a player must escape a maze populated by enemies.

Participant KF died very quickly upon beginning the maze game. She struggled with her inability to see the entire maze. “You can’t really see when they [the guards in the game] are coming,” she said. She wished the screen showed her more of the maze. KF ultimately completed the game, saying that she started going slower to watch for the creatures, backtracking when they came close, and then followed them just out of reach when they retreated. She had no issues with the navigation control, saying that it reminded her of a PlayStation controller. KF’s biggest issue was with the view of the maze on screen. KF died twice before completing the maze.

Participant NS noted that there was “no instructions on this one,” but said that “it didn’t seem hard to figure out how to move.” His character died quickly on his first attempt, and he noted that “you don’t get a lot of view in front of you.” He died multiple times on this round. He said, “I find the control a little hard. I can’t react as quickly as I want to react. I also feel like they’re moving so much faster, and I can’t move out of the way.” He started using his pointer finger, rather than his thumb, to control the navigation bar. He asked if he had any way of “killing these things” (the guards attempting to catch his character). He also noted some general confusion about the activity. “I don’t even know where I’m supposed to be going,” he said. “I guess I’m trying to get out of here.” He reiterated that he “just couldn’t move fast enough.” He finally changed his strategy from trying to outrun the creatures to waiting them out and following them when they moved out of killing range, and at this point he was able to complete the level.

Participant GP immediately walked into the guard, and was confused by the sudden re-spawn. GP didn’t know if it was a game glitch, the player died, or if the character was just transported. As Alex was observing and listening, he told GP that the character had died, so GP was more careful while navigating through the hallway on the next try.

Participant NK got through the first hallway on try one. It did take about 20 seconds to understand how the controls worked, but once that was done, timing and getting past the guard was easy. This, ultimately, caused some pain for NK later when the puzzle got harder.

Game level two findings. Stakeholders might take from these results that the architecture of the view of the maze and the speed of the player versus the enemies might negatively affect the user experience. This design adds difficulty, but the player should not feel like the architecture and controller is part of the game difficulty. Difficulty should come from the strategy within the game. In conversation with Kendra, who is a member of the design team, the research team learned that

the first population of players also shared this same discomfort with the view of the maze on the screen during this game at the design team’s exhibit at SXSW 2019. Given that this comment was made before in an informal observation, stakeholders should appreciate that this observation study captured the same result. One solution might be met by including a map of the tunnel on the instruction page so that the player can spend time strategizing as they are taking a break on a cut-away page that also lists some instructions.

Game level three, and participant results. In the third game, a player must choose the right response for a series of social media posts. A point system shows the player gaining points if they chose responses that ignore bullying or hateful message by choosing to respond to a positive comment with a positive reply.

Participant KF began the chatroom game by reacting to the negative comments, but then began focusing on the positive comments. She chose her answers at random and did not notice the point system until it was pointed out to her. She did not understand what the points indicated, or how she gained or lost points.

Participant NS noted that he chose his first selection because he “liked that it’s a little snippy, because this borg guy seems like a jerk.” NS went on to express confusion over who exactly his character was during this activity. He said, “It looks like I can respond as either person?” He indicated that he was unsure if any of the names on the screen referred to his character. He was also a little overwhelmed by how much text was on the screen, saying, “Oh my god, this is a lot to read.” After a few beats of silence, he said, “I don’t really know what’s happening.” Shaun asked him to clarify if the story was unclear or the directions for the game were unclear. He replied, “For this choose your own adventure part here? I just don’t know what character I am. It feels like I’m responding as all of the different characters. Or I am a character? I don’t really know what’s happening. And all the names keep changing, so all these...I just don’t know what’s happening.”

This level made Participant GP laugh a lot. “Who are these people chatting? Am I a celebrity or something?” Participant GP was confused about whether a better or worse score meant progress was being made. GP also wanted to choose the negative comments because he felt they were funny.

This chat room game confused Participant NK. The “score” at the top was unintuitive, and the observer also did not understand how the actions taken correlated with the score. Once the observer and the participant discussed the options, it was decided that “being nice” and ignoring the trolls was the best path forward. The score did not seem to matter, which confused NK.

At this point in “Publizeneo”, Participant BR commented that he thought he figured out the allegory of the story. He said that he suspected the allegory before this time, but when playing this level he was convinced that his understanding of the story was correct. BR suggested that the story should be clear earlier than in this level, otherwise the story is confusing.

Participant CH clicked through all story elements before this game, but started reading the story elements after this

game. He said that when he started reading the story after this game, some things within the game made more sense.

Game level three findings. From our results, stakeholders can take away that this level directly ties into the players' relationship with the narrative. Some were confused and others understood the story better after this level. If designers improve general understanding of the game's narrative, we believe this level will become less confusing. This level also needs a stronger connection between choices and points earned, perhaps in the form of clearer instructions or a clue within the game's narrative that hint at this connection.

Game level four, and participant results. In a fourth game, the player must use what they learned from the first game to draw another picture. This second sundial game was coded to be more of a challenge than the first sundial game.

Participant KF said the sundial game took her longer the second time, and she "messed up more." She didn't register if this happened during the first round, but she found that every time she missed the target she would lose one of her completed circles, forcing her to go back and redo that target. She messed up twice before completing the game.

NS was able to complete this second sundial game quickly. When asked if he found the game easier this time, he said, "No, I think I just had more of a knack for it." He did question why it seemed like the game ended "arbitrarily," noting that it did not seem like he had completed the entire picture when the game was won.

Participant GP said that he had hoped for more puzzle variety as he began this fourth game. He didn't experience this reprisal of game one as being any harder than the first time around. The feel of a game getting progressively harder is something GP enjoys about games, especially puzzle ones, and he did not think this fourth game was harder than the first.

Participant NK said "Oh this one again" and completed the puzzle very quickly.

Game level four findings. Most users completed this second sundial game faster than they did the first. A few users completed at a slower rate, but not by much. Our results suggest the stakeholders did achieve their goal here. Players used what they learned from the first time around to complete this puzzle. However, the difficulty level could be pushed a bit further.

Game level five, and participant results. In the fifth game, the participants play the tunnel game again with enemies spawning in different places than before. At the end, the antagonist has been defeated.

Upon beginning the second maze, Participant KF died twice quickly. She realized that if she moved her character to a certain spot on the board, the creatures couldn't reach her. She believes it took her three or four attempts to complete the round. She faced the same challenges as in round one, noting that she didn't know where the end of the maze was, and was trying to use her memory of the first game's map to find it. She felt like she was "mindlessly wandering."

When moving on to the maze game, NS laughed and said "Oh no, it's this again." But he was able to complete this level much more quickly than he had originally. When asked what he had learned from playing the game the first time, NS said that he knew how to move and avoid the creatures better. He

said he knew how to "adapt" to the challenges he faced the first time around.

Participant GP died twice before stating, "I need to change my tactics." He learned to wait in between guards and got through to the end on his third try.

Participant NK died many times and wanted to stop playing at this point. As Alex observed, he encouraged NK to continue playing and to be patient. Alex had to help NK get past this puzzle.

Game level five findings. The majority of our participants completed this game more quickly during this round, showing that they were able to apply what they learned in level two to the maze in level five. However, many still faced the same challenges they experienced in round two. Because of this, we would still recommend stakeholders make the adjustments we suggested earlier, including making it easier to see more of the maze by adding a map feature.

Overall Themes and Findings

Major themes we found that answer our research question relate to the narrative being too confusing. The third game, which was a chatroom game, seemed to be a turning point for most users. This chat room game either pulled the narrative together for the user or confused them further, depending on their relationship with the narrative at that point.

From our results, this game does not successfully stand alone as a piece that does not need supplemental literature. To fix this, stakeholders might narrow the story down to focus on one part of the full narrative without diverging into the multiple plotlines that are currently in the game. Since game three was a major turning point for all players, stakeholders might want to consider using the main idea of the story from game three as the main idea of the story for the full game. The goal of game three is to only respond to positive comments, therefore the lesson of that game is that responses give that commenter power. If you respond to a troll, trolls gain more power. If you respond to an ally, your team gains more power. This attention to the power you give could affect the user's interaction with enemies and difficulty level as the game continues. That way all levels would be tied in to this one theme, and narrative text would not be needed to explain plot points as the player progresses.

Our findings and current literature. As "Publizenego" is a quest-based mobile game, combining narrative with interactive puzzles, we focused our attention on related works that survey how users interact with these types of games. We adjacently survey the literature on game and level design as it pertains to the feedback gathered from our users. In Finley's piece on narrative topics in mobile gaming, the author specifically call out the difficulty of presenting a narrative-based game on a mobile device. With their smaller screens and plethora of applications, capturing the attention of a mobile gamer is more challenging than console or PC gaming. Screen to text size ratio is also called out as a potential issue, and the amount of text in "Publizenego" was called out by our subjects as a point of concern. Balancing the amount of narrative with engaging puzzles helps to break the users focus and re-engage. In our analysis, we further focus on the levels

at which players engaged with the text versus playing through just to get to puzzles and progress towards the games end.

For a deeper look into engagement, Zarzycki looks at how user engagement can be driven by character development. They note that as quests are completed, players have more stakes in the game, and feel a sense of unity with their characters. We note that in the case of “Publizenegro”, the necessary background information and context was not always available to our players. Providing a brief synopsis of the story, the main characters, and the tensions they were seeking to resolve would have better engaged players from the get-to, rather than having to learn on the fly. We note that this was a deficiency in our observational study design; if presented the opportunity to undertake the same observations, we would have front-loaded information about the characters and the world they were interacting in as a part of our introduction and consent language.

Character and world engagement aside, we note that several of our subjects struggled to learn the mechanics of the puzzle games on the fly, particularly in the challenging hallway puzzles. We can attribute this to two factors: our subject recruitment and better instructional design within the game. In the work of Dye, Green, and Bavelier, the authors assess how skills are built based on feedback from a video game. They note that younger players as well as those more experienced in playing video games often had a much easier time acquiring the skills necessary for solving puzzles and tasks, based on attention mechanisms they had tuned over game play time. Our limited recruitment pool did not require any previous experience with mobile gaming, so we suspect that our subjects did not have the same level of attention mechanism engagement as more veteran players.

Design of the screens also played a factor in time-to-completion, as some players felt they did not have enough information provided to them during game play to effectively solve the puzzles. Adding guardrails or more introductory puzzles may help to alleviate the burden from doing much of this self-learning from the players, as is discussed by Steinkuehler, Squire, and Barab.

Study limitations. As we mentioned early in this report, we did attempt to choose participants who had some familiarity with video games and mobile gaming. However, none of our participants considered themselves beginner-level gamers, one of designer’s ideal target audiences. Having a larger pool of participants that contained equal numbers of intermediate and beginner gamers would allow us to compare data across the two groups, and gain a better understanding of the overall challenges that exist within the game.

As a research team, we also came across issues during our virtual observations, as we have noted throughout the report. We often could not see our participants’ screens, which made it difficult to observe their gameplay, especially if they were not particularly vocal about their thoughts or actions during the observation. This may have skewed our results, or caused us to miss important issues our participants may have come across but did not share.

Appendix A – Consent Language

Thank you for participating in our observation. The purpose of this observation is to learn more about your experience playing the video game “Publizenego”.

The goal of this observation is to better understand any challenges you encounter while playing the game in order to improve upon its gameplay, storytelling, etc.

Results from this observation will be used to inform a report on this topic in Drexel University’s INFO 690 Understanding Users: User Experience Research Methods.

This observation should take approximately 30 minutes of your time.

Observation results will be analyzed by the researchers participating in this study; your data won’t be shared or accessed for any future research studies.

Results of this analysis will only be shared internally with the research team and within the context of this assignment in Drexel ’s INFO 690 course.

[If observer is recording observation] This observation is being recorded. The audio files will only be shared internally with the research team.

Collected results and notes will be stored on the secure servers provided by Google Drive.

Questions, complaints or issues encountered while participating in this observation should be noted directly to your observer.

Participation in this observation is voluntary, and at any time during completing the activity you may withdraw your participation.

Participation in this observation requires that you are at least 18 years old, or have the consent of your legal guardian.

If you meet the above criteria and wish to participate, please give your verbal consent now.

[If required] Please give your verbal consent to being recorded.

Appendix B – Field Notes

Observation of Participant KF (Age 23) Field Notes

Consent Process. I began the observation by reading Participant KF (referred to as “KF” from here on out) our consent language and getting verbal consent for both the activity and for its recording. I explained what the observation would consist of (watching her play the game), how her feedback would be used, and asked her to use the “think aloud” method, narrating her experiences and choices to me as she played the game in real-time.

Beginning of game/Event 1. KF was not able to read the opening bit of narration. “It went by quickly, I couldn’t really read it,” she said. She was only able to read the beginning of the first screen. As the game began, she asked to confirm that she was supposed to be interacting with the narration happening on the screen, to which I responded yes. She did not share what options she chose during this narration process, nor why she chose them.

Event 2. KF had no issues with the sundial game. “I felt like it was pretty easy to understand.”

Event 3. When asked why she chose certain responses during the second round of narration selection, KF showed some understanding of the plot. “I know that art is illegal,” she said. She was able to recognize that the storyline had changed slightly from where it stood at the beginning of the game, and was choosing responses based on her understanding of the plot. She said that, when playing video games, she typically likes to focus on the storyline

Event 4. KF died very quickly upon beginning the maze game. She struggled with her inability to see the entire maze. “You can’t really see when they [the creatures in the game] are coming,” she said. She wished the screen showed her more of the maze. She ultimately completed the game, saying that she started going slower to watch for the creatures, backtracking when they came close, and then followed them just out of reach when they retreated. She had no issues with the navigation control, saying that it reminded her of a Play Station controller. Her biggest issue was not being able to see more of the maze. She died twice before completing the maze.

Event 5. KF did not comment on this portion of the narration, nor mention what choices she made.

Event 6. KF began the chatroom game by reacting to the negative comments, but then began focusing on the positive comments. She chose her answers at random, and did not notice the point system until it was pointed out to her. She did not understand what the points indicated, or how she gained or lost points.

Event 7. KF expressed confusion over this interaction, and couldn’t understand why the character Lydia was deleted.

Event 8. KF said the sundial game took her longer the second time, and she “messed up more.” She didn’t register if this happened during the first round, but she found that every time she missed the target she would lose one of her completed circles, forcing her to go back and redo that target. She messed up twice before completing the game.

Event 9. Upon beginning the second maze, KF died twice quickly. She realized that if she moved her character to a certain spot on the board, the creatures couldn’t reach her. She believes it took her three or four attempts to complete the round. She faced the same challenges as in round 1, noting that she didn’t know where the end of the maze was, and was trying to use her memory of the first game’s map to find it. She felt like she was “mindlessly wandering.”

Final Thoughts. KF’s favorite part of the game was getting to choose how to interact with characters. She noted again that she likes narrative video games, saying that her favorite video game was Kingdom Hearts.

She also said that she enjoyed the maze game, saying that she liked “runaway/chase games.” She wished the maze had been expanded, with a few more obstacles. KF also suggested adding a smaller map in one of the corners that acted like a personal map for the player, so they could get a better sense of direction.

KF found the sundial game fun as a “mini or extra game,” but didn’t see how it could be expanded or changed into something more dynamic.

KF’s biggest issue was the “flow of interaction” during the narrative portions of the game. She was confused by some parts of the plot (specifically the moment Lydia gets deleted) and thought it could have been simpler or explained more clearly. However, her confusion over the plot did not impact that way she interacted with the game.

Total Play Time: ~15 mins, 45 seconds

Time per game:

- **Sundial 1:** ~20 seconds
- **Maze 1:** ~1 min, 13 seconds
- **Chatroom:** ~2 mins
- **Sundial 2:** ~45 seconds
- **Maze 2:** ~40 seconds

Observation of Participant NS (Age 30)
Field Notes

Consent Process. I began the observation by reading Participant NS (referred to as “NS” from here on out) our consent language and getting verbal consent for both the activity and for its recording. I explained what the observation would consist of (watching him play the game), how his feedback would be used, and asked him to use the “think aloud” method, narrating his experiences and choices to me as he played the game in real-time.

Beginning of game/Event 1. As soon as he began the game, NS noted that the first screen disappeared too quickly, and he did not have the opportunity to read it entirely. About a minute later, he came to the first “event” of the game, the opportunity to choose between two responses during a section of narration. He noted that he was “confused” by this section, as it was unclear to him that he was being asked to make a choice

Event 2. The first game he encountered was the sundial game, which he was able to complete quickly. He called it “a little tricky,” but had no issues understanding the concept or completing the game.

Event 3. NS next came to another narration portion, which prompted him to choose between two responses. When I asked him how he decided between the two responses, he said, “Just because, I don’t know, I liked the answer.” For the next narration prompt, however, he said (in response to the choices on the screen), “I believe I do know why I’m here,” indicating that he chose his response based on his understanding of the plot and the choices available to him.

Event 4. The next game was round one of the tunnel maze. NS noted that there was “no instructions on this one,” but said that “it didn’t seem hard to figure out how to move.” His character died quickly on his first attempt, and he noted that “you don’t get a lot of view in front of you.” He died multiple times on this round. He said, “I find the control a little hard. I can’t react as quickly as I want to react. I also feel like they’re moving so much faster, and I can’t move out of the way.” He started using his pointer finger, rather than his thumb, to control the navigation bar. He asked if he had any way of “killing these things” (the creatures attempting to catch his character). He also noted some general confusion about the activity. “I don’t even know where I’m supposed to be going,” he said. “I guess I’m trying to get out of here.” He reiterated that he “just couldn’t move fast enough.” He finally changed his strategy from trying to outrun the creatures to waiting them out and following them when they moved out of killing range, and at this point he was able to complete the level.

Event 5. As NS moved to the next part of the narration, he once again expressed confusion. “I don’t really know what’s going on, but I am moving forward,” he said of the plot.

Event 6. NS began playing the chatroom game. He noted that he chose his first selection because he “liked that it’s a little snippy, because this borg guy seems like a jerk.” He went on to express confusion over who exactly his character was during this activity. He said, “It looks

like I can respond as either person?”, indicating that he was unsure if any of the names on the screen referred to his character. He was also a little overwhelmed by how much text was on the screen, saying, “Oh my god, this is a lot to read.” After a few beats of silence, he said, “I don’t really know what’s happening.” I asked him to clarify if the story was unclear or the directions for the game were unclear. He replied, “For this choose your own adventure part here? I just don’t know what character I am. It feels like I’m responding as all of the different characters. Or I am a character? I don’t really know what’s happening. And all the names keep changing, so all these...I just don’t know what’s happening.”

Event 7. Moving on to the next portion of narration, I asked NS why he chose the particular answer that he did. He said, “It seemed like the more interesting response...I’m not really quite sure.”

Event 8. NS moved on to the sundial game again, and was able to complete it quickly. When asked if he found the game easier this time, he said, “No, I think I just had more of a knack for it.” He did question why it seemed like the game ended “arbitrarily,” noting that it did not seem like he had completed the entire picture when the game was won.

Event 9. Moving on to the maze game, NS laughed and said “Oh no, it’s this again.” But he was able to complete this level much more quickly than he had originally. When I asked him what he had learned from playing the game the first time, NS said that he knew how to move and avoid the creatures better. He said he knew how to “adapt” to the challenges he faced the first time around. After winning this round, he completed the game.

Final thoughts. NS said his level of familiarity with video and mobile games is intermediate. He plays video games for the puzzle/action component, as opposed to for the narration. I asked him to give me his impression of the four task-oriented components of this game: the sundial game, the maze, the chatroom, and the narration responses.

He liked the sundial game the best, because it took “one attempt to figure out how it worked...it was more of a straightforward reflex kind of game.”

He said that “going through the maze was fine once he figured it out,” but had issues with the navigation control. He thought it was hard to operate and wishes there were arrows instead. He also struggled with how small his view of the maze was, noting that it was hard to see the creatures coming at him. He said, “I feel like it was a game where you had to die a bunch of times just to map out the playing field.” He also said he never really knew what he was looking for or where he was going, and wished the end point was more well-defined. “Maybe a door or something, instead of a different color square.”

NS struggled with the chatroom game. “The chat game, I honestly did not know what was going on. The story was a little confusing to me, so I didn’t know what I was responding to, or why I was that person.” I asked him if he noticed the points system at the top of the screen, and he said that he did see it, but didn’t know why points were being added or deducted.

In choosing responses during the narrative interludes, NS said he picked responses based on “whatever one struck my fancy more, really.” He said he really didn’t have a clear idea of what the plot was, so he chose his responses based on his feelings “in the moment.” “I would see this interaction between two people, and I would pick a response that I liked the best out of that interaction. I had a rough idea of the story, like I knew Justin was a character and he was drawing and stuff. But I didn’t know if I was always Justin, or if I was playing as other characters too. I don’t know who I was responding as.” NS said that not knowing what was going on with the story did prohibit him from playing and understanding the game to its full potential.

NS also noted that there was a lot of reading, and he wished there was a way to reduce the text or break it up more. He thinks that one of the reasons he had issues with the amount of text is related to his general confusion over the plot.

Total Play Time: ~15 minutes

Time per game:

- **Sundial 1:** ~24 seconds
- **Maze 1:** ~2 mins, 10 seconds
- **Chatroom:** ~3 mins, 45 seconds
- **Sundial 2:** ~20 seconds
- **Maze 2:** ~1 min, 10 seconds

Kendra's recruitment fails	<ol style="list-style-type: none"> 1.) Happens to be a weekend when people are busy. <ol style="list-style-type: none"> a.) Moving b.) Things are picking up at work as places push to go back to normal -- so people are busy with work related things c.) No time - because of traveling 2.) My go-to demographic would be my parents or aunts and uncles. However, older people in my circle who were fine with surveys and interviews did not want to be observed playing a video game. The answers they gave me were always suggestions of younger people who might want to do it. 3.) One friend told me that he would do it if I couldn't find anyone else, but he had reservations about being watched. He said being watched makes him uncomfortable. Very honest response. 4.) Some just did not respond.
Kendra's recruitment success	Found 2 participants who are gamers and were excited to participate. My youngest brother, BR (21 yrs old)and a cousin, CH (15 yrs old) were excited to participate.

Kendra's Main Observations	Participant BR: age 21	Participant CH: age 15
Did they click through or stop to read the story elements?	Yes, he read the story. He understood the story as an allegory for navigating around Eurocentric beauty standards and white supremacy. Since he understood the allegory, he was confused by some of the story elements. He also read into some elements of game play where symbolic meaning was not intended.	No, he did not read the story but clicked through to continue whenever he saw text. After I asked him if he was reading, he started reading. He said that after he started reading, it explained some of what the game was about.
How long did it take them to beat each puzzle?	<ol style="list-style-type: none"> 1.) 4 minutes 2.) 2 minutes 3.) 4 minutes 4.) 1 minutes 5.) :30 sec 	<ol style="list-style-type: none"> 1.) 4 minutes 2.) 1 minute 3.) 1 minute 4.) 3 minutes 5.) :30 sec
How long did it take them to beat the full game?	21 minutes	12 minutes
First word that comes to mind about the game after completion.	Confusing	Fun
How could the game be improved?	The story could be more focused. There was a lot that went unexplained. "I wasn't sure if I was right about the subject, but since I	There could be more. It's kind of short. Add more color. In a part 2 he would expect to see

	<p>kind of had an idea but I wasn't sure it was weird and confusing. If there was something that told me that I was definitely right about what it was about it would have worked better."</p> <p>The graphics around the story elements and text elements were basic and "beginner-ish" so "I wouldn't play this game for fun because the graphics aren't up to par with what I usually download to play."</p>	<p>Justin bring Lynda back.</p> <p>In a part 2 he would like to see more action in the game.</p>
<p>What were the best parts of the game?</p>	<p>"When you were moving the guy through the tunnel - was fun."</p> <p>"The gold wheel, where you draw a picture was good. I liked that."</p>	<p>"Nice cool game."</p> <p>The first puzzle was confusing, but he felt accomplished when he figured it out when he did.</p> <p>"I would categorize this as a strategy game or escape game."</p> <p>Participant was curious about how the game was developed and showed interest in creating a game of his own.</p>

Observation of Participant NK (Age 22)
Field Notes

Consent Process. Read the consent language and received consent for app install and video recording.

Beginning of game/Event 1. NK was initially confused at the concepts. Subject asked observer if observer had any additional details about the game, what the background was and why certain dialog was taking place. The observer did not have any answers and simply asked the participant to continue playing. Participant said that their expectation was that it would be more interactive from the get go.

Event 2. Sundial game, participant at first did not understand that an action was required. Once NK hit the first dial, the instructions were understood and the remainder of the puzzle was easy to complete.

Event 3. Participant was silent, made choices with no real reactions. No real data collected.

Event 4. The participant got through the first hallway on try one. It did take about 20 seconds to understand how the controls worked, but once that was done, timing getting past the guard was easy. This, ultimately, caused some pain later on when the puzzle got harder.

Event 5. Again, participant spent most of this section in silence. NK did comment that the game was a lot more reading than expected and found it annoying that after each challenge the home screen was shown again.

Event 6. The chat room confused this participant more than most. The “score” at the top was unintuitive, and the observer also did not understand how the actions taken correlated with the score. Once the observer and the participant discussed the options, it was decided that “being nice” and ignoring the trolls was the best path forward. The score did not seem to matter, which confused the participant.

Event 7. More silence, even confusion. NK commented that having more of a background on the world these characters were living in would have helped provide some context.

Event 8. NK said “Oh this one again” and completed the puzzle very quickly.

Event 9. NK died many times and wanted to stop playing at this point. Observer encouraged participant to continue playing and be patient. Observer had to help participant get past this puzzle.

Final Thoughts. NK was confused by the whole interaction. Participant was not sure that the experience felt like a “game” – more of an exercise in reading with a few interactions. Not understanding the goals also made the story feel convoluted.

Total Filming Time: ~22 mins, 19 seconds

Time per game:

- **Sundial 1:** ~54 s
- **Maze 1:** ~0 min, 49 s
- **Chatroom:** ~3 min, 35 s
- **Sundial 2:** ~40 s
- **Maze 2:** ~4m 12 s

Observation of Participant GP (Age 24)
Field Notes

Consent Process. Read the consent language and received consent for app install and video recording.

Beginning of game/Event 1. GP was excited to get to play the game. Participant had lots of questions after the consent – what kind of game, why was it developed, what genre, etc. Observer told GP to be patient and experience the game for themselves.

Event 2. Sundial game, participant got it very quickly and didn't think it was a challenging enough puzzle. Participant noted that the mechanics could have been changed to add variable speed and make the timing harder, or to have false holes to fill that would have detracted from the score.

Event 3. Participant commented that they felt like they had some control of the characters destiny, but wasn't sure what that should be, wanting more exposition.

Event 4. The participant immediately walked into the guard, and was confused by the sudden re-spawn. Didn't know if it was a game glitch, GP died, or if the character was just transported there. Observer told GP character died and GP was more careful the next time, getting through the hallway on the next try. Felt the controls were ok.

Event 5. Again, GP wanted to know more about the origins of the story.

Event 6. The chat room made GP laugh a lot. "Who are these people chatting? Am I a celebrity or something?". Participant was confused if a better or worse score meant progress was being made. Participant also wanted to choose the negative comments as he felt they were funny.

Event 7. Nothing notable here.

Event 8. GP said he hoped for more puzzle variety as this was the same as before, not any harder than the first time. Didn't feel like the game was getting progressively harder, which is something he enjoys about games, especially puzzle ones.

Event 9. GP dies twice before stating "I need to change my tactics". Learns to wait in between guards and gets through on the third try.

Final Thoughts. GP was shocked that the game ended quickly and "abruptly". GP also did not like the link to a patreon for extra content, claiming that DLC was ruining games.

Total Filming Time: ~18 mins, 21 seconds

Time per game:

- **Sundial 1:** ~35 s
- **Maze 1:** ~1 min, 10 s
- **Chatroom:** ~2 min, 17 s
- **Sundial 2:** ~35 s
- **Maze 2:** ~2m 11 s

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